One embodiment of the invention uses a modem connected or built-in to a computer. In the future it is likely that telephone systems will be digitized, thus obviating the need for a modem. The scope of this invention contemplates such digitized systems.

The system could also be included in the ROM of a cellular telephone. In this case, the program would hide the outgoing calls from the user by silencing audio signals and maintaining a normal screen display. It is also conceivable that portable computers can be supplied with integral cellular telephones modified in this manner or with some other telecommunication device.

The main telecommunication criteria for this Agent security system is that the outgoing transmission (wire, radio signal or otherwise) be received by a switching mechanism, and contain information that causes the switching mechanism to forward the information received to a remote station. Presently, this information is a telephone number and/or a DNS query. But other indicia of the remote station may be substituted in alternative switchable communications systems without departing from the scope of this invention.

This application contemplates sending and receiving signals from a client computer to a host system through a global network system. The Internet has been described in this application as merely one application of the invention. It is contemplated that this invention can and will be applied to other global network systems. Thus, the specific disclosure addressed to the Internet should not be construed as a limitation as to the scope of the invention, but rather should be considered to be merely one embodiment of the invention.

It will be understood by someone skilled in the art that many of the details described above are by way of example only and are not intended to limit the scope of the invention which is to be interpreted with reference to the claims which follow.

We claim:

1. A method for tracing an electronic device comprising the steps of:

provding an Agent within the electron device, the Agent configured to transmit identifying indicia for the electronic device and/or its device components to a host system at a predetermined schedule without further intervention by the electronic device or user upon activation;

activating the Agent;

at the predetermined schedule, the Agent establishing a communication link between the electronic device and the host system and transmitting the identifying indicia to the host system without intervention by the electronic device or user;

enabling the host system to determine the location of the electronic device based on tracing of the communication link.

2. The method of claim 1 wherein the Agent is encoded in one or more forms, including software, firmware and hardware.

3. The method of claim 2 wherein the Agent is encoded in one or more device components in the electronic device, including internal non-volatile memory device, communication device, processor, digital signal processor, integrated circuit and hardware circuit.

4. The method of claim 2 wherein the Agent is encoded in one or more internal non-volatile memory devices in the electronic device, including ROM, BIOS, ROM, EPROM, EEPROM and Flash ROM.

5. The method of claim 3 wherein the communication device is a modem.

6. The method of claim 5 wherein the Agent establishes communication with the host system by using a command

function which initializes the communication and a call management function which interfaces with the host system.

7. The method of claim 3 wherein the Agent establishes communication with the host system independent of normal operations of the electronic device.

8. The method of claim 3 wherein the Agent is activated upon startup of the electronic device prior to activating the electronic device in respect of its normal system operations.

9. The method of claim 8 wherein the Agent is activated by loading into an internal volatile memory and running the Agent prior to activating normal system operations of the electronic device.

10. The method of claim 9 further comprising the steps of checking whether the Agent is also found on a hard disk within the electronic device and copying the Agent to the hard disk prior to loading and running the Agent.

11. The method of claim 3 wherein a first component of the Agent is provided in a first device component and a second component of the Agent is provided in a second device component.

12. The method of claim 11 wherein the first component of the Agent includes a secure protocol component of the Agent which communicates with the electronic device's operating system.

13. The method of claim 12 wherein the Agent immediately establishes the communication link with the host system to transmit the identifying indicia of the electronic device and/or its device components if the secure protocol component fails to establish communication with the operating system.

14. The method of claim 11 wherein the second device component includes a hard disk drive.

15. A method as in claim 1 wherein the communication link is a global network.

16. A method as in claim 15 wherein the global network is Internet network.

17. A method as in claim 16 where said step of transmitting the identifying indicia comprises the step of sending a DNS query with said identifying indicia encoded therein.

18. The method as in claim 16 wherein said step of enabling the host system to determine the location of the electronic device comprises the step of conducting a traceroute routine to identify to the host system those Internet communication links connecting the electronic device to the host system.

19. The method as in claim 18 wherein the traceroute routine is conducted upon request from the host system which determined that tracing of the electronic device would be desirable.

20. A method for tracing a computer comprising the steps of:

providing an Agent within the computer, the Agent configured to transmit identifying indicia for the computer or its device components to a host system at a predetermined time without further intervention by the computer or user upon activation;

activating the Agent;

at the predetermined time, the Agent establishing a communication link between the computer and the host system and transmitting the identifying indicia to the host system without intervention by the computer or user;

enabling the host system to determine the location of the computer based on tracing of the communication link.

21. The method of claim 20 wherein the Agent is encoded in one or more forms, including software, firmware and hardware.

22. The method of claim 21 wherein the Agent is encoded in one or more device components in the computer, includ-

ing internal non-volatile memory device, communication device, processor, digital signal processor, integrated circuit and hardware circuit.

23. The method of claim 23 wherein said device components further include ROM BIOS, central processing unit and modem.

24. The method of claim 23 wherein the Agent is activated independent of the computer's operating system.

25. The method of claim 24 wherein the Agent is activated prior to loading the operating system.

26. An apparatus for tracing an electronic device comprising:

an agent imbedded within the electronic device, the Agent configured to establish a communication link between the electronic device and a host system and transmit identifying indicia for the electronic device and/or its device components to the host system at a predetermined schedule without further intervention by the electronic device or user upon activation;

means for activating the Agent;

means for enabling the host system to determine the location of the electronic device based on tracing of the communication link.

27. The apparatus of claim 26 wherein the Agent is encoded in one or more forms, including software, firmware and hardware.

28. The apparatus of claim 27 wherein the Agent is encoded in one or more device components in the electronic device, including internal non-volatile memory device, communication device, processor, digital signal processor, integrated circuit and hardware circuit.

29. The apparatus of claim 27 wherein the Agent is encoded in one or more internal non-volatile memory devices in the electronic device, including ROM, BIOS, ROM, EPROM, EEPROM and Flash ROM.

30. The apparatus of claim 29 wherein the communication device is a modem.

31. The apparatus of claim 30 wherein the Agent comprises a command function which initializes communication with the host system and a call management function which interfaces with the host system.

32. The apparatus of claim 28 wherein the Agent is configured to establish communication with the host system independent of normal operations of the electronic device.

33. The apparatus of claim 28 wherein the Agent is configured to be activated upon startup of the electronic device prior to activating the electronic device in respect of its normal system operations.

34. The apparatus of claim 33 wherein the Agent is configured to be loaded into an internal volatile memory and executed prior to activating normal system operations of the electronic device.

35. The apparatus of claim 34 wherein the Agent is further configured to check whether the Agent is also found on a hard disk within the electronic device and copying the Agent to the hard disk prior to loading and running the Agent.

36. The apparatus of claim 28 wherein a first component of the Agent is provided in a first device component and a second component of the Agent is provided in a second device component.

37. The apparatus of claim 36 wherein the first component of the Agent includes a secure protocol component of the Agent which communicates with the electronic device's operating system.

38. The apparatus of claim 37 wherein the Agent is configured to immediately establish the communication link

with the host system to transmit the identifying indicia if the secure protocol component fails to establish communication with the operating system.

39. The apparatus of claim 36 wherein the second internal memory device is a hard disk drive.

40. An apparatus for tracing a computer comprising:

an Agent imbedded within the computer, the Agent configured to establish a communication link between the computer and a host system and transmit identifying indicia for the computer and/or its device components to a host system at a predetermined time without further intervention by the computer or user upon activation;

means for activating the Agent;

means for enabling the host system to determine the location of the computer based on tracing of the communication link.

41. The apparatus of claim 40 wherein the Agent is configured to establish communication with the host system independent of normal operations of the computer.

42. The apparatus of claim 41 wherein the Agent is configured to be activated independent of the computer's operating system.

43. The apparatus of claim 42 wherein the Agent is configured to be activated prior to loading the operating system.

44. The apparatus of claim 40 wherein the Agent is encoded in one or more forms, including software, firmware and hardware.

45. The apparatus of claim 44 wherein the Agent is encoded in one or more device components in the electronic device, including internal non-volatile memory device, communication device, processor, digital signal processor, integrated circuit and hardware circuit.

46. An electronic device comprising:

an agent imbedded within the electronic device, the Agent configured to establish a communication link between the electronic device and a host system and transmit identifying indicia for the electronic device and/or its device components to the host system at a predetermined schedule without further intervention by the electronic device or user upon activation;

means for activating the Agent;

means for enabling the host system to determine the location of the electronic device based on tracing the communication link.

47. A computer comprising:

processing means operable with an operating system;

a storage device storing application programs and data;

an input and output interface;

means for communicating with a host computer;

an Agent imbedded within the computer, the Agent configured to establish a communication link between the computer and a host system via said communicating means and transmit identifying indicia for the computer and/or its device components to the host system at a predetermined time without further intervention by the electronic device or user upon activation;

means for activating the Agent;

means for enabling the host system to determine the location of the computer based on tracing of the communication link.

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